



Mombasa Polytechnic University College

A constituent College of JKUAT
A Centre of Excellence



P.O Box 90420-80100, Mombasa. Tel:254 2492222/3/4, 249057. Fax: 254 2495632

Mobile: 0724 955377/0733 955377. Web site: www.mombasapoly.ac.ke

TENDER NOTICE

Reference no: MPUC/PGS/2011 - 2012/TT

ENGINE ROOM SIMULATOR

Mombasa Polytechnic University College in her development plan invites tenders for the supply of a **Engine Room Simulator**, this tender shall include installation, Commissioning and training of end users.

The simulator shall aid in the study and training of operations on a modern conception engine room and shall include **the main console** that represents the main control board of a modern diesel propulsion engine to be connected to a basic module which includes:

- ✓ the didactic software,
- ✓ the instructor's working site,
- ✓ the **Engine Room working site**.

Trainees shall have at their disposal a complete mimic panel showing the diagram of a slow engine, 2 stroke, 8 cylinders.

The proposals which do not include real consoles (only software) will be **automatically rejected**.

The simulation process shall take into account many parameters, some of which can be fixed by the lecturer/technical staff at the beginning of the training session, while some others can be varied during in the course of the exercise:

Simulated components:

- main and stand-by sea water pump
- main and stand-by cylinder fresh water pump
- cylinder fresh water - sea water heat exchanger
- cylinder fresh water circulating pump for preheating
- steam preheater
- main and stand-by piston fresh water pump
- piston fresh water - sea water heat exchanger
- oil pump
- oil-sea water heat exchanger
- nine crankshaft bearings
- thrust bearing
- starting air compressor
- turbocharger



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At least the following parameters should be visualized and printed:

- engine RPM
- ship speed
- exhaust temperature at turbocharger outlet
- cylinder fresh water delivery pressure
- cylinder fresh water inlet temperature
- cylinder fresh water outlet temperature
- piston fresh water delivery pressure
- piston fresh water inlet temperature
- piston fresh water outlet temperature
- lubricating oil pressure
- lubricating oil temperature at booster inlet
- lubricating oil temperature at booster outlet

The main parts of the engine represented in this module should be as follows:

- 8 cylinder engine basement
- main sea water cooling system
- cylinder fresh water cooling system
- piston fresh water cooling system
- oil lubricating system
- starting air and exhaust system
- fuel oil system

Moreover it must be possible to simulate apparatus faults and failures, with consequent activation of alarms, such as piston underside air, defective fuel nozzle, defective starting air compressor, worn piston rings, defective water pump, dirty heat exchanger, occluded heat exchanger, defective three way valve, dirty jacket, dirty piston cooling water circuit, occluded piston cooling water circuit, dirty lubricating oil circuit, explosive gas mix in crandcase, defective sea water pump.

Some of the proposed experiments which should be possible to study are: starting up from rest, engine shutdown, maneuvers in remote control (a reply to the engine room directly operates the command), maneuvers in local control (a reply to the engine telegraph must be followed by the commanded action using local controls in the engine room), navigation in remote control, navigation in local control.



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Preferential condition is the expandability with other modules like Diesel electric power plant; Oil-tankers loading system; Cargo master; Refrigerating and air conditioning system; Sanitary water, bilge and ballast; Fire fighting system; On board auxiliaries; On board oleo dynamics; Gyro fins; Gas tankers loading system; Steering gear system; Fuel and lube oil system; Chemicals tankers loading system; Inert gas system; Fishing module; Lube oil system; Shaft electric generator; Steam generators; Steam turbine and condenser.

In phase of proposal it is necessary to send a wide description and diagrams showing the setting and the parameters developed in a possible expansion.

Supply will be complete upon service of installation, commissioning and training at the laboratory of End User.

A complete and satisfactory training on practical use **MUST** be carried out at the end of installation for 5-6 professors of the University by a specialized technician, finally commissioning shall be carried out.

Interested firms should submit copies of the below documents which shall be used as a criteria for valuation:

- ❖ Certificate of incorporation, Business permit, VAT and tax Compliance, Audited accounts for the last 3 years
- ❖ Evidence of previous consultancy work of similar nature, Full address and contact persons of major clients served with similar work, Accreditation/Affiliation Certificate, Qualification and experience of key staff(Attach CVs) and evidence of capability to undertake the assignment.

Interested bidders may obtain tender documents from the Supplies Office at The Mombasa Polytechnic University College Tom Mboya Avenue upon payment of **Non – Refundable fee Kshs. 4,000.00 (Five thousand shillings only)** per set of document **during working hours from Monday – Friday (8.00am- 4.00pm)**. Dully completed documents enclosed in plain sealed envelope and properly marked with the appropriate Reference Number as indicated above should be addressed to the below address:

THE PRINCIPAL,

THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE,

P. O. BOX 90420 – 80100 MOMBASA.

Or deposit in the **tender box** situated at the reception area of the **Principal's Office** so as to reach the Institution on or before **5/09/2011**. The tender documents will be opened thereafter in the main



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conference room at the 2nd floor of the administration block. Applicants are invited to attend or send their representatives if they so wish. Late bids will be returned unopened.

The Mombasa Polytechnic University College reserves the right to accept or reject any application(s) wholly or partially without giving reason(s) for its rejection

PROCUREMENT MANAGER

FOR THE PRINCIPAL.